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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,593	02/26/2004	Masanobu Takeuchi	SNY-052	4361

20374 7590 03/20/2006

KUBOVCIK & KUBOVCIK  
SUITE 710  
900 17TH STREET NW  
WASHINGTON, DC 20006

EXAMINER

PARSONS, THOMAS H

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 03/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/786,593	TAKEUCHI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thomas H. Parsons	1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/24/2004</u>   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:  
  
Page 3, line 7, suggest changing "13: separator" to --13: positive electrode plate--; and,  
  
Page 10, 8, after "glass plate 15", suggest inserting --positive electrode plate 13--  
  
Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  
  
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP10-223220 in view of Vaccaro et al. (5,738,907).

**Claim 1:** JP10-223220 in Figure 1 discloses a nonaqueous electrolyte secondary battery comprising a positive electrode (2) and a negative electrode (1) capable of occluding and releasing lithium and a nonaqueous electrolyte, wherein the negative electrode comprises silicon as an active material (paragraphs [0010]-[0032]).

JP10-223220 does not disclose a foamed metal containing an active material therein.

Vaccaro et al. disclose a foamed metal containing an active material therein for a nonaqueous electrolyte secondary battery (abs., col. 1: 7-11, col. 3: 5-8 and 21-23, col. 5: 17-22, col. 8: 59-63, col. 1: 51-col. 2: 30, and col. 9: 17-19 and 33-63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electrode of JP10-223220 by incorporating the foamed metal of Vaccaro et al. because Vaccaro et al. teach a foamed metal containing an active material therein that would have provided an electrode with enhanced strength and more desirable electrical and mechanical properties thereby improving the overall structural integrity and performance of the battery.

**Claim 2:** The rejection is a set forth above in claim 1 wherein further Vaccaro et al. disclose foamed metal comprising copper or nickel (col. 4: 59-64).

**Claims 3 and 4:** The rejection of claims 3 and 4 are as set forth above in claims 1 and 2, respectively, wherein further JP10-223220 discloses a slurry comprising silicon particles and a binder and Vaccaro et al. disclose a foamed metal containing an active material therein.

The recitation **prepared by impregnation or coating** has been considered and construed as a process limitation that adds no additional structure to the electrode. However, Vaccaro et al. disclose impregnation or coating a foamed metal with an active material (col. 5: 23-44).

**Claims 5-8:** The rejections of claim 5-8 are as set forth above in claims 1-4, respectively, wherein further JP10-223220 discloses a negative electrode comprising the foamed metal (1) and a metal current collector (6), and the foamed metal is adjacent to a side of the metal current collector.

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**Claims 9-12:** The rejections of claim 9-12 are as set forth above in claim 5-8, respectively, wherein further JP10-223220 discloses a foamed metal and the metal current collector secured together by structural pressure of the battery.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas H. Parsons whose telephone number is (571) 272-1290. The examiner can normally be reached on M-F (7:00-4:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
PATRICK JOSEPH RYAN  
SUPERVISORY PATENT EXAMINER

Thomas H Parsons  
Examiner  
Art Unit 1745

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